C1 conclude [perform analysis of said reaction.]

Claims 2-92 canceled.

93. (Amended) The apparatus [instrument] of claim 1, wherein said product analysis chamber [means for analysis] is configured to perform one or more analyses selected from [the] a group consisting of: sequencing of target species, DNA fingerprinting, physical mapping of target species, DNA library analysis, electrochemical detection, and hybridization detection.

94. (Amended) The apparatus [instrument] of claim 1, wherein at least one reactant chamber is configured to contain a [said] sample [is] selected from [the] a group consisting of: intact cells, fixed cells, lysed cells, microorganism, and tissue.

95. (Amended) The apparatus [instrument] of claim 94, wherein at least one reactant chamber is configured to contain a sample [preparation yields] comprising a specific nucleic acid target molecule.

96. (Amended) The apparatus [instrument] of claim 1, wherein at least one reactant chamber is configured to contain a [said] sample [preparation includes sorting] comprising specific cell types.

97. (Amended) The apparatus [instrument] of claim 1, wherein said reaction and reactant chambers are constructed on a single substrate.

98. (Amended) The apparatus [instrument] of claim 1, wherein the temperature controller is configured to maintain said reaction [is controlled] at a constant temperature.

99. (Amended) The apparatus [instrument] of claim 98, wherein said reaction chamber is configured to contain an in vitro transcription reaction.

100. (Amended) The apparatus [instrument] of claim 1, wherein the temperature controller is configured to thermally cycle said reaction [is controlled by thermal cycling].

101. (Amended) The apparatus [instrument] of claim 100, wherein said reaction chamber is configured to contain a chain reaction.

102. (Amended) The apparatus [instrument] of claim 101, wherein said reaction chamber is configured to contain a polymerase chain reaction.

103. (Amended) The apparatus [instrument] of claim 101, wherein said reaction chamber is configured to contain a ligase chain reaction.

104. (Amended) An apparatus [instrument] for controlling [at least one] a chemical reaction, comprising:

a) an array of chambers [for containment of the reaction] including:

[at least one] a reaction chamber configured to contain a chemical reaction [for preparing a sample for use in said reactions];

at least one reactant chamber configured to receive one or more reactants [for adding or removing reagents involved in said reactions];

at least one channel interconnecting said reaction and reactant chambers;

a transferring mechanism coupled to said reaction and reactant chambers by way of said channel;

b) a heater configured to heat reactants in the reaction chamber;

[b)] c) a temperature controller coupled to the heater and configured to control the temperature of a reaction in the reaction chamber [said instrument]; and

[c)] d) a product analysis chamber coupled to the reaction chamber and adapted to analyze reaction products contained in the product analysis chamber. [at least one chamber for analysis of products of said at least one chemical reaction.]

105. (Amended) The apparatus [instrument] of claim 104, wherein said product analysis chamber [means for analysis] is configured to perform one or more analyses selected from the group consisting of: sequencing of target species, DNA fingerprinting, physical mapping of target species, DNA fingerprinting, physical mapping of target species, DNA library analysis, electrochemical detection, and hybridization detection.

106. (Amended) The apparatus [instrument] of claim 104 in which said product analysis chamber [means for analysis] utilizes a predetermined array of oligonucleotides.

107. (Amended) The apparatus [instrument] of claim 106 in which said product analysis chamber is configured to use the array of oligonucleotides [in used] in performing hybridization techniques.

108. (Amended) The apparatus [instrument] of claim 104, wherein said product analysis chamber [means for analysis] is configured to purify [includes purification of] said reaction products.

111. (Amended) The apparatus [instrument] of claim 104, wherein at least one reactant chamber is configured to contain a [said] sample [is] selected from [the] a group consisting of: intact cells, fixed cells, lysed cells, microorganism, and tissue.

112. (Amended) The apparatus [instrument] of claim 111, wherein at least one reactant chamber is configure to contain a sample [preparation yields] comprising a specific nucleic acid target molecule.

113. (Amended) The apparatus [instrument] of claim 104, wherein at least one reactant chamber is configured to contain a [said] sample [preparation includes sorting] comprising specific cell types.

114. (Amended) The apparatus [instrument] of claim 104, wherein said reaction

and reactant chambers are constructed on a single substrate.

C3 Conclude

115. (Amended) The apparatus [instrument] of claim 104, wherein the temperature controller is configured to maintain said reaction [is controlled] at a constant temperature.

C4

117. (Amended) The apparatus [instrument] of claim 104, wherein the temperature controller is configured to thermally cycle said reaction [is controlled by thermal cycling].

118. (Amended) The apparatus [instrument] of claim 117, wherein said reaction chamber is configured to contain a chain reaction.

119. (Amended) The apparatus [instrument] of claim 118, wherein said reaction chamber is configured to contain a polymerase chain reaction.

120. (Amended) The apparatus [instrument] of claim 118, wherein said reaction chamber is configured to contain ligase chain reaction.

121. (Amended) The apparatus [instrument] of any of claim 113-120, wherein at least one reactant chamber is configured to contain [the reagents include] labeled primers for subsequent identification of reaction products.

Add the following new claims.

C5

122. The apparatus of claim 1, wherein the array of chambers and the heater are integrated on a single substrate.

123. The apparatus of claim 104, wherein the array of chambers and the heater are integrated on a single substrate.